

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: :  
: Group Art Unit: 2611  
Anthony Bessios et al. :  
: Examiner: Leila Malek  
Appln. No.: 10/667,492 :  
: Confirmation No.: 1240  
Filed: September 23, 2003 :  
: Customer No.: 38013  
For: TECHNIQUE FOR DETERMINING :  
OPTIMAL TRANSITION-LIMITING :  
CODE :

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REQUEST FOR PRE-APPEAL BRIEF CONFERENCE**

Pursuant to the Pre-Appeal Brief Conference Pilot Program announced in the Official Gazette, Applicants hereby request a pre-appeal brief conference in the above-referenced patent application.

The present patent application was filed on September 23, 2003. On January 8, 2007, an initial Office Action was issued rejecting claims 1-11 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement, and under 35 U.S.C. § 101 as being directed to non-statutory subject matter. On April 9, 2007, Applicants traversed, with amendment and argument, the rejection of claims 1-11. On November 27, 2007, a Final Office Action was issued rejecting claims 1-9 and 11 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement, and claim 11 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. On January 28, 2008, Applicants traversed, with argument, the rejection of claims 1-9 and 11 under both 35 U.S.C. § 112, first paragraph, and 35 U.S.C. § 101. On February 19, 2008, an Advisory Action was issued maintaining the rejection of claims 1-9 and 11 under both 35 U.S.C. § 112, first paragraph, and 35 U.S.C. § 101. Thus, despite repeated attempts to convince the Examiner that the claims are fully enabled and statutory, the Examiner has maintained the rejection of claims 1-9 and 11, which is certain to be overturned on appeal. Rather than spending further time reiterating the same arguments clearly establishing that the

claims are fully enabled and statutory, Applicants have elected to pursue the Pilot Program.

I. THE ENABLEMENT REJECTION OF CLAIMS 1-9 AND 11

The Examiner asserts that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Specifically, the Examiner asserts that the specification fails to describe a "transition-limiting code."

Applicants respectfully disagree. Specifically, Applicants respectfully submit that the specification is replete with descriptions of transition-limiting codes (e.g., see from page 3, line 18, to page 4, line 12, "transition-limiting codes . . . reduce or eliminate the number of full-swing transitions (FST) between sequential symbols in a multi-level signaling system"; from page 11, line 1, to page 13, line 4, "transition-limiting codes . . . also . . . provide useful clock data recovery (CDR) transitions"; page 20, lines 15-19, "transition-limiting codes can increase the resilience of multi-level line codes to reflections" and "[b]y reducing or eliminating full-swing transitions these transition-limiting codes can reduce peak and mean square distortion, and increase the timing margins"; etc.). Also, the two provisional applications (i.e., U.S. Provisional Patent Application Nos. 60/450,349 and 60/494,561) to which the present application claims priority, and the entirety of which are incorporated by reference in the present application, are equally replete with descriptions of transition-limiting codes. Thus, Applicants respectfully submit that persons of ordinary skill in the art, upon reading the specification, would be enabled to make and/or use the claimed invention.

At this point Applicants would like to emphasize that the claims are directed to a method for determining an optimal transition-limiting code for use in a multi-level signaling system, and not creating and/or generating a transition-limiting code. That is, the claims are directed to a method for determining an optimal transition-limiting code out of a plurality of transition-limiting codes that have already been created and/or generated. As discussed above and below, Applicants respectfully submit that it is clear that persons of ordinary skill in the art are well aware of transition-limiting codes. However, the claims are directed to a method for determining an optimal transition-limiting code out of a plurality of transition-limiting codes that have already been created and/or generated for use in a multi-level signaling system. The specification fully supports this claimed methodology at, for example, page 4, line 21, to page 8, line

15; and page 14, line 18, to page 21, line 3. Thus, Applicants respectfully submit that persons of ordinary skill in the art, upon reading the specification, would be enabled to make and/or use the claimed invention.

The Examiner also asserts that the Examiner searched other available references, but could not find a definition for transition-limiting code.

Applicants respectfully disagree. Specifically, Applicants respectfully submit that persons of ordinary skill in the art are well aware of the term transition-limiting code. For example, the following papers and patent publications are readily available and clearly describe transition-limiting codes: U.S. Patent Nos. 5,859,601, 6,526,530, 6,819,137, 6,917,312, 7,113,550, 7,180,957, 7,180,958, 7,180,959, and 7,302,631; U.S. Patent Application Publication Nos. US2004/0109510A1, US2003/0152154A1, US2006/0126751A1, US2005/0099325A1, US2004/0240580A1, US2004/0208257A1, US2004/0170231A1, and US2004/0109509A1; International Patent Application Publication Nos. WO/1998/044633 and WO/2004/053810; A. Bessios et al., Transition-limiting codes for 4-PAM signaling in high speed serial links, Global Telecommunications Conference, 2003, GLOBECOM '03, IEEE, Volume 7, pages 3747-3751, December 1-5, 2003; and V. Stojanovic, Channel-Limited High Speed Links: Modeling, Analysis and Design, PhD Dissertation, Stanford University, September 2004. Thus, Applicants respectfully submit that persons of ordinary skill in the art, upon reading the specification, would be enabled to make and/or use the claimed invention.

Also, claim 1 recites specific steps for determining an optimal transition-limiting code for use in a multi-level signaling system. The steps comprise determining a coding gain for each of a plurality of transition-limiting codes; selecting one of the plurality of transition-limiting codes having a largest coding gain for use in the multi-level signaling system; and employing the selected transition-limiting code in the multi-level signaling system to at least reduce a number of full-swing transitions between sequential signals. Each of these steps is well supported in the specification and described in such a manner as to enable one skilled in the art to make and/or use the claimed invention (e.g., see paragraphs [0011]-[0014], [0037], [0052], [0054], [0056], [0058], and [0059] in U.S. Patent Application Publication No. US2004/0170231A1). The remaining claims are equally well supported in the specification. Thus, Applicants respectfully submit that persons of ordinary skill in the art, upon reading the

specification, would be enabled to make and/or use the claimed invention.

In view of the foregoing, it is respectfully requested that the aforementioned enablement rejection of claims 1-11 be withdrawn.

## II. THE WRITTEN DESCRIPTION REJECTION OF CLAIM 11

The Examiner asserts that there is no support in the specification for "readable storage medium."

Applicants respectfully disagree. Specifically, the specification clearly recites that "it is within the scope of the present invention that such instructions may be stored on one or more processor readable carriers (e.g., a magnetic disk), or transmitted to one or more processors via one or more signals." Applicants respectfully submit that one skilled in the art would understand that a processor readable carrier in the form of, for example, a magnetic disk, would encompass a processor readable storage medium since such a processor readable carrier is a medium (e.g., a magnetic disk) that stores computer instructions. Applicants would also like to remind the Examiner that a patent applicant may be his/her own lexicographer.

At this point it should be noted that, as stated in MPEP § 2163.02, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed. The subject matter of the claim need not be described literally (i.e., using the same terms or in haec verba) in order for the disclosure to satisfy the description requirement.

In view of the foregoing, it is respectfully requested that the aforementioned written description rejection of claim 11 be withdrawn.

## III. THE NON-STATUTORY SUBJECT MATTER REJECTION OF CLAIM 11

The Examiner asserts that a storage medium is non-statutory subject matter.

Applicants respectfully disagree. Specifically, there is a long list of cases that clearly define a storage medium as being statutory subject matter. For example, Applicants direct the Examiner's attention to the case law set forth in In re Beauregard, 53 F.3d 1583, (Fed. Cir. 1995), In re Lundgren, 76 USPQ2d 1385 (Bd. Pat. App. & Int. 2005), and others, which clearly provide a patentable subject matter basis for a storage medium.

In view of the foregoing, it is respectfully requested that the aforementioned non-statutory subject matter rejection of claim 11 be withdrawn.

IV. THE INFORMATION DISCLOSURE STATEMENTS

Information Disclosure Statements and accompanying PTO-1449 forms were filed on February 1, 2008, and February 7, 2008. There is presently no indication that the Examiner considered the references identified in those Information Disclosure Statements. Accordingly, the Examiner is respectfully requested to acknowledge consideration of the references identified in those Information Disclosure Statements by initialing the PTO-1449 forms and returning a copy of the initialed forms to the undersigned.

V. CONCLUSION

In view of the foregoing, it is respectfully submitted that the rejections of claims 1-9 and 11 are in error. Accordingly, for the foregoing reasons, Applicant requests an appeal conference be convened so as to advise Applicant whether the Office will: 1) allow the present claims; 2) reopen prosecution and issue a new office action; or 3) allow this case to proceed to appeal.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0206, and please credit any excess fees to the same deposit account.

Respectfully submitted,

Hunton & Williams LLP

By: 

Thomas E. Anderson  
Registration No. 37,063

TEA/vrp  
Hunton & Williams LLP  
1900 K Street, N.W.  
Washington, D.C. 20006-1109  
Telephone: (202) 955-1500  
Facsimile: (202) 778-2201  
Date: March 27, 2008